

## WHAT IS CLAIMED IS:

1. A method for measuring current-voltage characteristics of a photoelectric conversion device by irradiating light to said photoelectric conversion device and a reference device corresponding to said photoelectric conversion device at the same time while detecting an irradiance of said light using said reference device, characterized in that a light responsive time constant of an irradiance detection circuit in which said reference device is used is adjusted so that said light responsive time constant of said irradiance detection circuit comes closer to a light responsive time constant of said photoelectric conversion device.
2. The method according to claim 1, wherein said light is light whose irradiance is varied with time.
3. The method according to claim 1, wherein said light is pulsed light by an artificial light source.
4. The method according to claim 1, wherein said light is the sunlight.
5. The method according to claim 1, wherein by using an integrating circuit in said irradiance detection circuit in which said reference device is used, said light responsive time constant of the irradiance detection circuit is increased so as to come closer to said light responsive time constant of said photoelectric conversion device.

6. The method according to claim 5, wherein as said integrating circuit, an RC integrating circuit is used.

7. The method according to claim 5, wherein as said integrating circuit, an RL integrating circuit is used.

5        8. The method according to claim 5, wherein said integrating circuit contains a component comprising a semiconductor device or a photoelectric conversion device which is different from the reference device.

10       9. The method according to claim 8, wherein said component comprises another photoelectric conversion device which is different from the reference device and also different from the photoelectric conversion device to be measured.

15       10. The method according to claim 1, wherein said light responsive time constant of said irradiance detection circuit in which said reference device is used is continuously changed.

20       11. The method according to claim 1, wherein said light responsive time constant of said irradiance detection circuit in which said reference device is used is made to come closer to that of said photoelectric conversion device so that a difference between a normalized short-circuit current value by the irradiance detection circuit in which the reference device is used and a normalized short-circuit  
25       current value of said photoelectric conversion device, which

are measured at any timing during the time when the current-voltage characteristics of the photoelectric conversion device are being measured, to fall within a range of  $\pm 3\%$ .

5           12. An apparatus for measuring current-voltage characteristics of a photoelectric conversion device, comprising at least a light irradiation means for irradiating light to said photoelectric conversion device and a reference device corresponding to said photoelectric  
10 conversion device at the same time, a irradiance detection circuit in which said reference device is used, a means for measuring said current-voltage characteristics of said photoelectric conversion device, and a means for changing a light responsive time constant of said irradiance detection  
15 circuit in which said reference device is used.

13. The apparatus according to claim 12, wherein said light irradiation means has an artificial light source to generate pulsed light.

14. The apparatus according to claim 12, further  
20 comprise a means for installing said photoelectric conversion device and said reference device outdoors so that they face to the sunlight at a substantially equal angle.

15. The apparatus according to claim 12, wherein said irradiance detection circuit in which said reference device  
25 is used has an integrating circuit.

16. The apparatus according to claim 15, wherein said integrating circuit is an RC integrating circuit.

17. The apparatus according to claim 15, wherein said integrating circuit is an RL integrating circuit.

5 18. The apparatus according to claim 15, wherein said integrating circuit contains a component comprising a semiconductor device.

19. The apparatus according to claim 18, wherein said component comprises another photoelectric conversion  
10 device which is different from said reference device and also different from said photoelectric conversion device.

20. The apparatus according to claim 12, wherein said means for changing said light responsive time constant of said irradiance detection circuit in which said reference  
15 device is used is a means for continuously changing said light responsive time constant.

21. A process for producing a photoelectric conversion device, comprising a step (a) of forming at least one photoelectric conversion portion on a substrate  
20 to obtain a photoelectric conversion device and a step (b) of measuring current-voltage characteristics of said photoelectric conversion device, characterized in that said step (b) includes a step of providing a irradiance detection circuit in which a reference device corresponding  
25 to said photoelectric conversion device is used and a step

of adjusting a light responsive time constant of said irradiance detection circuit so that said light responsive time constant of said irradiance detection circuit comes closer to a light responsive time constant of said photoelectric conversion device.

22. The process according to claim 21, wherein said photoelectric conversion device has at least one semiconductor junction composed of a thin film semiconductor.

23. The process according to claim 21, wherein said step (b) is situated in an intermediary stage of said plurality of steps for producing said photoelectric conversion device.

24. The process according to claim 21, wherein based on a measured value in the step of measuring the current-voltage characteristics of the photoelectric conversion device, the condition of at least one step of forming the photoelectric conversion device is adjusted so that said value falls in a prescribed range.

25. An apparatus for producing a photoelectric conversion device, comprising a means (i) for forming at least one photoelectric conversion portion on a substrate to obtain a photoelectric conversion device and a means (ii) for measuring current-voltage characteristics of said photoelectric conversion device, characterized in that said

means (ii) has a means for irradiating light to said photoelectric conversion device and a reference device corresponding to said photoelectric conversion device at the same time, a irradiance detection circuit in which said  
5 reference device is used, a means for measuring the current-voltage characteristics of said photoelectric conversion device, and a means for changing a light responsive time constant of said irradiance detection circuit in which said reference device is used.